AMSAT News Service Weekly Bulletins
Issue: ANS-305
Date: 2015-11-01
Sources: amsat-ans-2015-ans-305-weekly-hyperkitty-f0c4703c66.txt

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AMSAT NEWS SERVICE
ANS-305
The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT $ANS-305.01
ANS-305 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 305.01
 >From AMSAT HQ KENSINGTON, MD.
DATE November 1, 2015
To All RADIO AMATEURS
BID: $ANS-305.01

Super Strypi (SPARK) Launch Planned for November 1, 2015

The following satellites are planned to be launched on 2, Nov 2015.

Argus, EDSN, HawaiiSat-1, ORS-Squared, PrintSat, STACEM, STU-1, Supernova-Beta
Site is Pacific Missile Range - Kokole Point, Kauai, Hawaii

Satellite	Downlink	Beacon	Mode
Argus	2403.000-2403.400	437.290	1200bps AFSK
EDSN	2401.200-2431.200	437.100	1200bps AFSK
HawaiiSat1 (HiakaSat1)	145.9805	437.2705	9600bps GFSK
ORS-Squared	437.325	.	9600bps GMSK
PrintSat	437.325	.	9600bps GMSK
STACEM	.	.	?

STU-1	2402.000-2445.000	436.360	9600bps GMSK
Supernova-Beta	437.570	.	1200bps AFSK

HawaiiSat-1
1 99999U 00000 15306.00000000 .00002809 00000-0 69295-4 0 00007
2 99999 094.6040 077.7732 0056131 182.2912 079.1822 15.38919159000464

http://spaceflight101.com/spacerockets/spark-super-strypi/
http://www.ne.jp/asahi/hamradio/je9pel/sparksat.htm
http://www.cubesat.org

[ANS thanks Mineo Wakita, JE9PEL for the above information]

Duchifat 1 status update

We're happy to report that the satellite is still operational and doing very well.
We've already received 20 stations using Duchifat 1, and all said stations are displayed on our map at www.h-space-lab.org .
QSL cards are on their way, and a few have already been received.
It's a fantastic experience to be heard by the satellite, get immediate digipeating response from it, and later see your position on the map on the website, after a successful dump at our GS from the satellite.
If you try to contact it and encounter any difficulty, please don't hesitate to write to us at 4X4HSC(a)gmail.com
It's all very fun. We also hope people can share their experiences here.
73, and good luck.

[ANS thanks the Herzliya Science Center team posting on the AMSAT=BB for the above information]

UKube-1 CubeSat Completes Mission

UKube-1, the UK Space Agency’s first national spacecraft, has now completed its nominal mission following over 14 months of operations. Discussion is underway with AMSAT-UK about the possibility of taking over UKube-1 operations to continue its educational and outreach activities.

Launched in July 2014, UKube-1 is a technology demonstration mission with a broad set of objectives aimed at attracting and training future generations of engineers, encouraging collaboration across sectors and institutions, fast tracking space technology development and engaging with students.

As a 3 unit CubeSat (30x30x10cm), flying 4 main payloads, with all the key subsystems of much larger satellites, UKube-1 remains one of the most advanced

CubeSats ever built. Despite some technical challenges in orbit, the mission has achieved a range of milestones including:

• delivery into the correct planned orbit (around 650km, sun-synchronous)
• successful deployment of solar panels and antenna
• good battery health
• slow spin rate measured
• uplink and downlink capabilities checked, including Large Data Transfer, downlink at 3 speeds, and redundant communications mode
• all core payloads commissioned and data collected for each
• on-board camera technology successfully tested
• data downlinked from multiple ground stations across the globe

UKube-1 has also helped maintain the UK's leading position in the CubeSat sector. Participation in the mission placed Clyde Space in an excellent position to capitalize on the fast growing global nanosatellite market. The company has experienced 100% year on year growth, both in turnover and employees, as a direct result from involvement in UKube-1, and is firmly established as a global leader.

Mark McCrum, Bright Ascension Ltd, said:
"UKube-1 provided us with an invaluable opportunity to gain flight heritage for our software technology and to get deeply involved in the operation of a complex CubeSat mission. It gave a huge boost to our credibility as a space software provider and has been instrumental in winning further work."

Craig Clark, CEO Clyde Space Ltd, said:
"UKube-1 represents a pivotal achievement in the development and growth of Clyde Space. The project moved the company from being a spacecraft subsystems
supplier to providing full missions for our customers. To give some context to
the extent that Ukube-1 has had to our business, Clyde Space has more than quadrupled in size in the last 3 years and there are currently over 60 CubeSats
planned through production here in Glasgow over the next 18 months. The return
on investment for Ukube-1 in terms of jobs and export sales for the UK has been
outstanding and is a great example of industry and the UK Space Agency working
together to put the UK at the forefront of global space technology."

Professor Andrew Holland, Open University, added:
"Involvement in the UKube-1 mission, though our C3D instrument, has had a positive effect on our research and technology program within the Space Instrumentation Group at the Open University, as well as a positive effect on
our technology partners in the project; XCAM Ltd and e2v Ltd. The project has
helped the OU to build a new strand of instrument development within the group,
raised awareness of the CubeSat platform as a potential vehicle to accelerate
the development of scientific space instrumentation, and has provided early in-
orbit-demonstration of technologies. The mission introduced us to new academic
and industrial collaborators operating in the space sector and supported the career development of the young engineers and scientists working on the project."

STFC's RAL Space provided the Ground Station for the mission at Chilbolton Observatory in Hampshire UK, and UKube-1 operations were commanded from

there.

Mission Manager Dr Helen Walker said:
“It has been a very exciting time, made possible only with the great support from all the teams involved.”

Although the Agency-supported mission phase has ended, discussion is underway
with AMSAT-UK about the possibility of taking over UKube-1 operations to continue its educational and outreach activities until the satellite orbit naturally degrades.

More information about UKube-1 can be found in the missions section of the UK
Space Agency website
https://www.gov.uk/government/case-studies/ukube-1

Source
https://www.gov.uk/government/news/ukube-1-completes-mission

UKube-1 carries a set of AMSAT-UK FUNcube boards which provide an educational
beacon for use by schools and a linear transponder for amateur radio communications.

UKube-1 nominal frequencies:
• 145.840 MHz Telemetry downlink
• 145.915 MHz FUNcube subsystem beacon
• 400 mW inverting SSB/CW linear transponder
– 435.080-435.060 MHz Uplink
– 145.930-145.950 MHz Downlink

[ANS thanks AMSAT-UK for the above information]

Fort Worth students talk to ISS

Students at Daggett Montessori School in Fort Worth used amateur radio to talk
to astronaut Kjell Lindgren KO5MOS, aboard the International Space Station.

Before the contact Cowtown Amateur Radio Club member Keith Pugh W5IU explained
to the students how they are able to talk to the ISS.

The contact, which took place on Thursday, October 29, gave the students the opportunity to ask questions about life in space. The Star-Telegram newspaper
reports Grace Jordan, a seventh-grader, wondered about the effects of microgravity on food digestion.

Kjell used the amateur radio station in the ESA ISS Columbus module callsign NA1SS, while the students used the station K5COW set up by Cowtown Amateur Radio Club in the school auditorium.

Amateur Radio on the International Space Station (ARISS) lets students worldwide experience the excitement of talking directly with crew members of the International Space Station, inspiring them to pursue interests in careers

in science, technology, engineering and math, and engaging them with radio science technology through amateur radio.

Watch Daggett Montessori MS Talk to Space Station 2015
https://www.youtube.com/watch?v=9uzIBucg2SE

Read the Star-Telegram story at
http://www.star-telegram.com/news/local/community/fort-worth/article41837055.html

ARISS
http://ariss.org/

[ANS thanks ARISS and AMSAT-UK for the above information]

Tim Peake KG5BVI and the ISS Astro Pi's

AMSAT-UK members are leading on the Amateur Radio on the ISS (ARISS) Schools contacts program for the upcoming Tim Peake Principia mission to the ISS. A number of high profile school contacts are planned to be carried out and this activity is being coordinated with the UK Space Agency as part of the overall Principia Educational Outreach program.

Two specially augmented Raspberry Pi's called Astro Pi's are planned to fly on an Orbital Sciences' Cygnus cargo freighter to the ISS in early December. They will be used by UK astronaut Tim Peake KG5BVI during his Principia mission on the Space Station which is expected to commence in mid-December.

The Astro Pi's are planned to run experimental Python programs written by young people in schools across the country; the results will be returned back to Earth at the end of the mission. ARISS/AMSAT-UK members are actively involved in discussions with the UK Space Agency, ESA, the Raspberry Pi Foundation and others to establish the feasibility of re-purposing one of the Astro Pi units, either within or post Tim Peake's mission, to provide an alternative video source for the amateur radio HamTV transmitter in the ISS Columbus module. Additional discussions are ongoing with all parties for joint educational activities into the future with the Astro Pi units being networked and potentially enhancing the capability of the amateur radio station on board Columbus.

The main mission of HamTV is to perform contacts between the astronauts on the ISS and school students, not only by voice as now, but also by unidirectional video from the ISS to the ground. ARISS has been working with Goonhilly and hope to provide a video download facility via one of their large dishes for the schools contacts as well as attempting to receive the video at each

school as
part of the contact.

Principia mission
http://www.esa.int/Our_Activities/Human_Spaceflight/Principia

School Shortlist for Tim Peake Space Station Contact
http://amsat-uk.org/2015/07/14/school-shortlist-tim-peake-iss/

HamTV
http://amsat-uk.org/satellites/hamtv-on-the-iss/

Astro Pi
http://astro-pi.org/

Twitter
https://twitter.com/astro_pi

[ANS thanks AMSAT-UK for the above information]

Radio amateurs to help London children talk to ISS

On Wednesday, November 4 pupils at the Eleanor Palmer Primary School in Camden, London should have the opportunity to speak to an astronaut in space thanks to an Amateur Radio Telebridge link via Australia. The audio will be streamed via the web and Echolink.

An International Space Station school contact has been planned with participants at Eleanor Palmer School, London, United Kingdom on Wednesday, November 4. The event is scheduled to begin at approximately 09:51 GMT. It is
recommended that you start listening approximately 10 minutes before this time.
The duration of the contact is approximately 9 minutes and 30 seconds.

The contact will be a telebridge between astronaut Kjell Lindgren KO5MOS, using the callsign NA1SS from the amateur radio station in the ISS Columbus module, and Martin Diggens VK6MJ in Western Australia. The contact should be audible over portions of Australia and adjacent areas. Interested participants
are invited to listen in on the 145.800 MHz FM downlink.

Audio from this contact will be available via the amateur radio Echolink system on node *AMSAT* (101377) and via the IRLP Node 9010 Discovery Reflector.

Streaming Audio will be able on the web at
https://sites.google.com/site/arissaudio/

Audio on Echolink and web stream is generally started around 20 minutes prior
to the contact taking place so that you can hear some of the preparation that
occurs. IRLP will begin just prior to the ground station call to the ISS.

Contact times are approximate. If the ISS executes a reboost or other manoeuvre, the AOS (Acquisition Of Signal) time may alter by a few minutes

Eleanor Palmer Primary School, a non-selective community school, is located in central London in the United Kingdom. London is an exciting and dynamic capital city and its schools are the best in the country, attributed to the social and ethnic diversity, excellent local leadership and the quality of teaching.

Eleanor Palmer is a relatively small school of around 220 pupils with single classes of 30 children per year. The youngest pupils are 3 years old and the oldest 11 years old. Due to the central London location it is a highly diverse and inclusive school with staff and children from many different backgrounds.

The pupils achieve highly as judged by national benchmarks. One of the core aims of the school is to inspire in all pupils a love of learning and the desire to continue to learn and they therefore seek to provide a rich and broad curriculum opening minds and creating opportunities. The school hope that their contact with the ISS will inspire pupils to go on to learn more about space through the study of Science, Technology, Engineering and Math.

Participants will ask as many of the following questions as time allows:

1. What have you seen that is more beautiful than earth?

2. Who or what inspired you to choose this job?

3. Does being in space make you feel differently about earth?

4. What can you learn from the ISS that you cannot learn on earth?

5. Will normal people who are not astronauts be able to visit space in the ISS one day?

6. How do you sleep?

7. Is it quiet up there in the ISS?

8. When you get back to earth, do you have to re-train your muscles?

9. Can you call home?

10. Do you all have to be scientists?

11. What do you think is the most important things children should know about space?

12. What time zone do you use?

13. Do you have plants on the ISS?

14. What has been your favourite experiment?

15. How does your brain respond to micro gravity?

16. How do you wash your clothes?

17. If you cry in space, with laughter, what happens to your tears?

18. What do you want to do when you come back to earth?

19. How do you get enough oxygen?

20. Is it more scary taking off from earth or returning to earth?

21. What is your energy source on the ISS?

22. What does it feel like to be in space?

23. Is it always dark in space?

Amateur Radio on the International Space Station (ARISS) lets students worldwide experience the excitement of talking directly with crew members of the International Space Station, inspiring them to pursue interests in careers
in science, technology, engineering and math, and engaging them with radio science technology through amateur radio.
http://www.ariss-eu.org/

A telebridge contact, where a dedicated ARISS amateur radio ground station, located somewhere in the world, establishes the radio link with the ISS. Voice
communications between the students and the astronauts are then patched over regular telephone lines.
http://www.ariss-eu.org/ARISS%20Telebridge%20Guidelines.doc

What is Amateur Radio ?
http://www.essexham.co.uk/what-is-amateur-radio

Eleanor Palmer Primary School
http://www.eleanorpalmer.camden.sch.uk/news/countdown-to-iss-link-up/
Twitter @eleanorpalmersc

[ANS thanks ARISS and AMSAT-UK for the above information]

AMSAT Events

Information about AMSAT activities at other important events around the country. Examples of these events are radio club meetings where AMSAT Area Coordinators give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence (a table with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations).

*Saturday, 7 November 2015 – Oro Valley Amateur Radio Club Hamfest in Marana AZ

*Saturday and Sunday, 7-8 November 2015 – Stone Mountain Hamfest and ARRL Georgia Section Convention in Lawrenceville GA

*Monday, 16 November 2015 – Tri-City Amateur Radio Association meeting in Goodyear AZ

*Saturday, 5 December 2015 – Superstition Superfest 2015 in Mesa AZ

[ANS thanks AMSAT-NA for the above information]

ARISS News

Successful Contacts

* A direct contact via K5COW with students at Daggett Montessori School K-8,
Fort Worth, Texas, USA, was successful Thu 2015-10-29 14:12:56 UTC 31 deg.
Astronaut Kjell Lindgren KO5MOS responded to 10 questions from students.

Watch a video recording of the contact at
http://youtu.be/CIsWPZ3TbWU

Daggett Montessori, a “School of Choice” within the Fort Worth Independent School District, was created thirty years ago and was one of the first public
school Montessori programs in the nation. Based on the highly successful Montessori methodology and philosophy, Daggett Montessori has approximately 500
students, all selected through a blind lottery system. We are a Title I school,
with close to 60% of our students economically disadvantaged.

As a kindergarten through eighth grade program, we provide a safe, nurturing environment that focuses on long term relationships among staff, students, and
parents. Our parents are actively involved in every aspect of school life.
Maria Montessori was the first woman to graduate from medical school in Italy
so science is an area of particular focus in the Montessori curriculum. She designed many of the lessons to instill a sense of awe about the natural world.
Our parents are very involved in every aspect of school at Daggett Montessori.
Of particular interest is our greenhouse with an aquaponics system in which we
raise various herbs and vegetables. We also have multiple raised beds in which
the children grow vegetables. Our parents provide gardening lessons on a weekly basis. Our students were very excited to learn that lettuce is being grown on the ISS!

* A direct contact via K8UTT with students at Dearborn Public Schools, Dearborn, Michigan, USA was successful Tue 2015-10-27 16:01:59 UTC 57 deg.

Dearborn Public Schools is a public school district that serves a community in
suburban Detroit, MI. This school district is part of a growing, vibrant area
built upon quality education for nearly 19,600 students. Dearborn also has a unique feature added to this growing, vibrant area. It is home to the largest
Arabic-speaking population outside of the Middle East. One out of every two students learns English as a second language. These qualities help to form Dearborn Public Schools into the exceptional and diverse community of learners
it is today!

Mary Varady, STEM Coordinator for the District has been working with local Amateur Radio operators for almost a year to arrange the contact with the

International Space Station. In the spring of 2015, Dearborn Public Schools Media Tech Specialist Gordon Scannell, an Amateur Radio operator, presented the details of the program to district teachers. Varady has been working with principals to provide lessons and other activities tied to the event. Scannell, along with other Amateur Radio volunteers have spent countless hours arranging the technical details for Tuesday's event including such activities as installing a large temporary antenna on the roof of the Berry Center.

Students will be able to ask questions of the ISS crew during their scheduled time. Varady received more than 2,000 questions from students across the district and then had the daunting task of narrowing them down to only the best. In total, 18 students in grades first through eighth had their questions selected. In addition, students across the district will be able to tune in and watch as the students gathered in the lecture hall talk with the crew of the International Space Station.

However, an ARISS contact encompasses more than just students asking questions with the ISS crewmember. Additional components include student activities such as class lessons about space research, the International Space Station, and radio technology. The ARISS contact is a "hands on" real world application of the science, technology, engineering and math being taught in the classroom.

* A direct contact via RA1AJN between cosmonaut Sergey Volkov RU3DIS and students at "About Gagarin From Space: Ham Radio Session with the Members of Cosmonautics Federation and Students" in St Petersburg, Russia, was successful on 2015-10-27 11:35 UTC.

* A direct contact via W8ISS with students at West Michigan Aviation Academy, Grand Rapids, MI, USA, was successful Fri 2015-10-23 17:58:48 UTC 49 deg.
Astronaut Kimiya Yui, KG5BPH answered 20 questions for students.

Local TV news stations reported on the event:
http://www.wzzm13.com/videos/news/local/2015/10/23/students-talk-to-astronaut-aboard-space-station/74486064/
http://woodtv.com/2015/10/23/w-mi-students-chat-with-astronauts-aboard-iss/
http://fox17online.com/2015/10/23/local-students-talk-to-an-astronaut-in-space/

Listen to an audio recording of the contact at
http://www.k8tb.org/W8ISS%20Edited.mp3

The West Michigan Aviation Academy is a tuition-free public charter high school founded by Dick DeVos upon encouragement from wife, Betsy. Stemming from their passion for both education and aviation, the school opened its doors in the fall of 2010 and is located on the grounds of the Gerald R. Ford International Airport. Like other high schools, our curriculum includes core subjects. But as an aviation-themed high school the curriculum at WMAA is designed for students who have a passion for aviation and/or an interest in science, technology, engineering and mathematics. (STEM)

The Aviation program includes training for the Private Pilot certificate in

the student's senior year. The school owns our own Cessna 172 that is provided
at direct operating costs to the students. Although they must pay for the flight training the total cost is much lower than renting at the local flight
school and ground instruction is provided for as part of their elective classes. Currently we have 11 students in the program and hope to have 18 by
the time of the contact. We also try to get the kids out around the airport to
experience the many different job opportunities available in aviation.

The Robotics program includes FIRST robotics programs and many of our competitors are taking both engineering and aviation classes. Our engineering
program provides for instruction in aerospace, robotics and electronic fields.
We try to closely alley the Aviation and Engineering departments.

* A direct contact via 8NØSDF with students at Saku Children’s Science Dome
for the Future, Saku City, Japan, was successful Thu 2015-10-22 09:52:21 UTC
54 deg. The interview with astronaut Kimiya Yui, KG5BPH was conducted in Japanese.
Yui answered 10 questions for students.

Watch a video of the interview at
https://www.youtube.com/watch?v=gl6fkE14Rrw

The Saku Children’s Science Dome for the Future is a science museum that was founded in 2001. It has a variety of exhibits on earth science, space, biotechnology, the environment and more. Some of the attractions that gain the
attention of the children are a life-size model of a dinosaur, a 170 seat planetarium and a “mercury” display model presented by NASA. The center is located near the birth place of Mr. Kimiya Yui. Mr. Yui himself has visited the
center several times. The name of the center has the word “children’s” in it,
yet all ages can learn from the Saku Children’s Science Dome for the Future.

* A direct contact via RA1AJN between cosmonaut Sergey Volkov RU3DIS and students at "About Gagarin From Space: Ham Radio Session with the Members of Cosmonautics Federation and Students" in St. Petersburg, Russia, was successful
on 2015-10-20 14:30 UTC.

Upcoming Contacts

* Eleanor Palmer School, London, United Kingdom, telebridge via VK6MJ
The ISS callsign is presently scheduled to be NA1S
The scheduled astronaut is Kjell Lindgren KO5MOS
Contact is a go for: Wed 2015-11-04 09:51:39 UTC 44 deg

* Dragonskolan, Umeå, Sweden, telebridge via VK6MJ
The ISS callsign is presently scheduled to be NA1SS
The scheduled astronaut is Kjell Lindgren KO5MOS
Contact is a go for: Thu 2015-11-05 10:35:17 UTC 28 deg

Watch
http://www.ariss.org/upcoming-contacts.html
for information about upcoming contacts as they are scheduled.

[ANS thanks ARISS, and Charlie, AJ9N for the above information]

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Joe Spier, K6WAO
k6wao at amsat dot org